

end of the lake. On the western side of these and near the horizon cirro-stratus and alto-stratus clouds prevailed. These phenomena probably would not have been observed had not the men been admiring a beautiful sundog visible at the time.

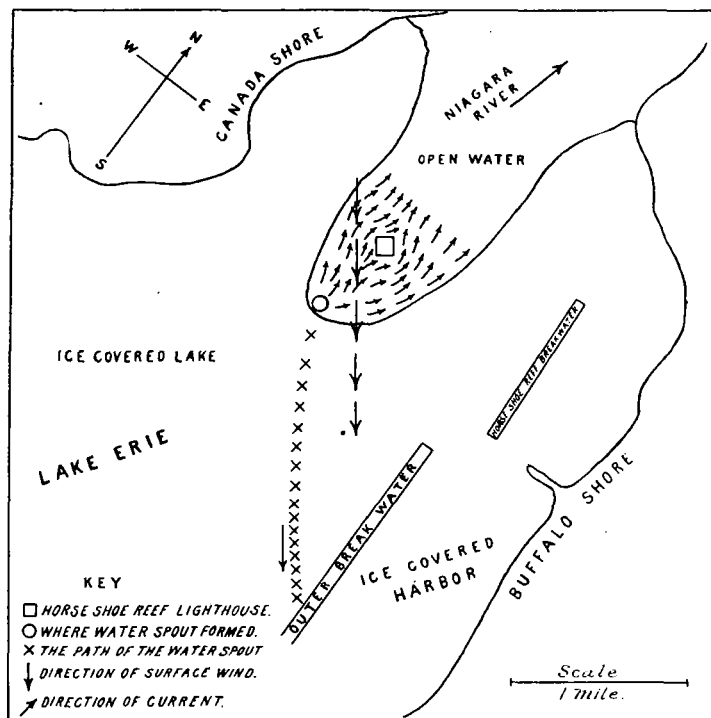


FIG. 1.—Location of waterspout off Buffalo, N. Y., February 11, 1907.

INTERNATIONAL METEOROLOGY.

REPORT ON THE PROCEEDINGS OF THE INNSBRUCK CONFERENCE.

The elaborate report on the proceedings of the International Meteorological Conference of Directors, held at Innsbruck in September, 1905, has been published by the Centralanstalt at Vienna, as an appendix to its annual for 1905. The report consists of three parts—the provisional program, the daily proceedings, and the reports of subcommittees—and an appendix of 90 pages containing articles contributed by over thirty meteorologists. The entire volume is one of the most important of the international meteorological publications. On page 44 the subcommittee on the international meteorological codex reported that this important work was practically finished, and expressed the hope that it would be published in English, German, and French.

The same committee also reported that the international comparison of normal barometers, namely one or two for each national service, is still in the most unsatisfactory condition, and should be undertaken at once; and in accordance with information received by the committee it recommended that the central offices at Berlin, London, Paris, St. Petersburg, and Vienna should prosecute the work. Since the meeting of this committee at Innsbruck Professor Sundell has published the results of his elaborate and successful personal work on this subject since 1885, and has shown that the international comparisons are now practicable at less expense and with greater accuracy than at any time previously. The extensive work done by Dr. Frank Waldo, who at that time compared Washington, Cambridge, Toronto, Kew, Hamburg, St. Petersburg, Berlin, and Paris, can now be repeated with greater advantage. This is, in fact, a work that can no longer be delayed if we would secure for barometry the international accuracy demanded by the progress of meteorology.

The subcommittee on clouds presented a series of revised definitions of cloud names, (*stratus*, *lenticularis*, etc.), and recom-

mended the publication of additional charts in the new edition of the international cloud atlas.

The conference resolved that hereafter the international committee should consist only of the directors of services. Accordingly its present membership is as follows: Chaves, Davis, Eliot, Hellmann, Hepites, Hildebrandsson, Lancaster, Mascart, Mohn, Moore, Nakamura, Palazzo, Paulsen, Pernter, Russel, Rykatchew, and Shaw. At the first session of the new committee, held on September 14, Mascart was chosen president, and Hildebrandsson secretary.

INTERNATIONAL METEOROLOGICAL CODEX.

This publication, referred to above as having been presented to the Innsbruck meeting, has been published in German by the Meteorological Office at Berlin. It contains viii + 81 pages, and a chart showing the international form for monthly and annual results for stations of the second order. Its contents may be divided into: (1) historical, followed by (2) the resolutions that are now in force or important relative to the general conduct of meteorological observations, computations, and publications; these are a codification of the results of all the international conferences, from that at Leipzig, 1872, to that at Innsbruck, 1905, and the English edition will be as desirable as the German; (3) the twenty pages of index constitute virtually an index to the contents of all the appendices of all the successive international reports. We undoubtedly owe this to Dr. G. Hellmann, whose high appreciation of the importance of bibliography is shown by the resolution offered by him at the conference at Rome, urging the need of a catalog of published observations and a catalog of published memoirs bearing on meteorology. In response to this international wish the German bibliography by Hellmann has already been published, but the general bibliography undertaken by the Weather Bureau is still unpublished. The international meteorological tables were published in Paris in 1890.

This codex will save a great deal of labor and uncertainty in hunting thru the seventeen or eighteen volumes of international reports, and it is to be hoped that the English, French, and Spanish editions will be able to reproduce exactly some of the more difficult passages in the authoritative German, especially the definitions of phenomena, such as *halos*, *rauhfrost*, and *glatteis*, about which there seems to have been much confusion in the past.—C. A.

RAINFALL AND OUTFLOW ABOVE BOHIO, IN THE VALLEY OF THE CHAGRES.

By GEN. HENRY L. ABBOT, U. S. A., retired. Dated Washington, D. C., April 9, 1907.

The exceptional uniformity both as to temperature and rainfall existing in this tropical valley, and the entire absence of frost and snow, render a study of the ratio between downfall and drainage much more simple than in the Temperate Zone. The subject has an important bearing upon certain engineering problems of the Canal, and received early attention from the New Panama Canal Company. The preliminary results appeared in the MONTHLY WEATHER REVIEW for June, 1900,¹ and in the number for February, 1904,¹ a full summary of six years' observations was given. The records have been continued since the work passed under the control of the United States—that is to say, to the beginning of the current year, thus adding three more years to the accumulated data. The important bearing of the subject upon many economical questions now receiving attention in this country, such as irrigation, the water supply of cities, generation of power, etc., may render a brief summary of the results of these nine years' investigations interesting to hydraulic engineers. The methods employed were identical thruout, and were so fully explained in the paper in the MONTHLY WEATHER REVIEW for February, 1904, that a tabular statement will suffice to bring the matter up to date (see Table 1).

¹ Vol. XXVIII, p. 243, and Vol. XXXII, p. 57.